Chapter 47
Becoming Globally Competent through Student Mobility

Vitaliy Popov, Dine Brinkman, and Jan Pieter van Oudenhoven

47.1 Introduction

One of the basic requirements for education nowadays is to prepare learners for participation in a networked, informational, and increasingly virtualized society. The ability to productively collaborate across cultures, distances, and various contexts will be one the most critical resources for social and economic development. At least three prominent driving forces of this are (1) the globalization of the economy with increasing mobility of labor (the unprecedented vast and rapid movement of people, ideas, and goods across the globe), (2) advances in computer and information technology that have brought new opportunities to connect people across physical distance and time barriers, and (3) climate instability that calls for global environmental stewardship (Boix-Mansilla and Jackson 2011). These three driving factors shape our lives and create the pressing need for educational approaches that prepare a new kind of graduate for a world of growing cultural interaction and diversity. Graduates should not only be competent in their chosen content domain but also be able to apply acquired knowledge, skills, and awareness in diverse situations and become so-called globally competent. There is a well-documented body of

V. Popov (✉)
University of San Diego, San Diego, CA, USA
e-mail: vitaliyxpopov@gmail.com

D. Brinkman
Wageningen University, Wageningen, The Netherlands

J.P. van Oudenhoven
University of Groningen, Groningen, The Netherlands

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research on global competence, which can be broadly defined as dynamic pursuit of knowledge (i.e., the understanding of social, political, economic, and environmental issues related to one's own and a foreign culture), skills (i.e., second-language proficiency as well as a range of personal capabilities to identify and collect local, national, or international sources of information), and attitudes (i.e., the perspectives of individuals on cultural differences and a willingness to adapt to foreign communities and work environments) that together enable individuals to communicate and work effectively with those who have different perspectives, worldviews, and disciplinary and cultural backgrounds from their own (Boix-Mansilla and Jackson 2011; Hunter et al. 2006; Lambert 1994; Li 2013).

Global student mobility (i.e., students traveling physically or virtually to another country in pursuit of a part of or their whole academic career) is considered as a way to acquire global competence. Studies abroad, exchange programs, and internships have traditionally been utilized as the primary educational resources to immerse students in other cultures and instill global perspectives (Hill 1991). The experience of living, studying, or undertaking virtual programs in a different cultural context is instrumental in fostering students' respect for diversity and capacity to manage other cultures and in creating greater employment opportunities. Over the last 50 years, global student mobility has been evaluated in numerous studies and found to produce positive results in terms of cultural and global competence development (Jacobone and Moro 2014; Machorro 2009; Nash 1976; Paulusse 2014). However, some studies have pointed to problems such as high costs and time investment. Studying abroad benefits employability, but not universally; studying abroad is often designed as an optional component in most higher education programs, and it requires active guidance/supervision to achieve program outcomes (van 't Klooster, E 2014). Notwithstanding these complications, the exposure to other cultural, political, or economic contexts via global mobility makes it possible for students to reflect on their own cultural qualities/characteristics in relation to other cultures, learn intercultural skills, understand multiple contexts, and engage in comparative analysis of their own and others' worldviews. Educators, in turn, must provide opportunities for students to be globally mobile that can help students prepare to live and work in a world of growing diversity and complexity.

The following paragraphs review the three selected driving forces (globalization, technological advances, and climate instability) and elaborate on how educational practice responds to them by preparing globally competent students. In doing so, we consider student mobility as a crucial way to develop global competence.

47.1.1 Globalization as Driving Force

Globalization affects our lives because of a continuous exchange of information, products, capital, ideas, and other artifacts of culture. For instance, a pair of pants sold in the Netherlands may have been made from Indonesian cotton by workers in China. Then it may have been shipped on a British freighter with a Russian crew.

Other examples of globalization are McDonald's and Starbucks to be found in almost all big cities around the world. Projects in industry, multifunctional design, academia, health care, web design, and international law frequently involve professionals working together in real and virtual multidisciplinary teams spread across the globe (Sheppard et al. 2004). The United Nations Population Division reported the total number of migrants in the world has reached about 232 million by the year 2013 (UN, September 2013).

According to the UNESCO, there are more than 3.4 million students studying outside their own country as of 2009, whereas in the 1960 there were only 238 thousands of students globally (Chen and Barnett 2000). UNESCO expects the number of international students to reach about seven million by the year 2020 (Altbach et al. 2009) and 7.8 million by the year 2025 (Boehm et al. 2002).

Student and scholar mobility has been a common practice since the eleventh/twelfth century when the first universities were established. However, the number of international students has increased over 95 % over the last 10 years (Knight 2014). The pace, numbers of students, formats, motives, directions, and outcomes of the global student mobility have been significantly transformed over the last decades due to several social, political, and economic factors that influence students to undertake all or part of their education experience abroad. According to Knight (2014), there are three generations of global student mobility such as (1) student/people mobility, (2) program and provider mobility, and (3) education hubs (for an overview, see Knight 2014). Over the past two decades, these three generations of global mobility have evolved due to a complex interplay of many push and pull variables like revenue earning, skill migration, selection of courses and programs, and quality of course provision (Choudaha and De Wit 2014). The push and pull variables are the social, economic, political, and cultural factors that either hamper or enable global student mobility. For example, in the last 15 years, the USA, the UK, and Australia remain the top three hosting countries for international students (OECD 2012). Referring to Choudaha and De Wit (2014), in 2000, 23 % of all globally mobile students were enrolled in the USA, 11 % in the UK, and 5 % in Australia. Stricter immigration policies in the USA after 9/11 made it more problematic for international students to enter the country, whereas Australia and the UK became less strict. The recent economic growth in East Asian countries like China, Hong Kong SAR, India, Taiwan, Singapore, Malaysia, South Korea, and Japan has led to large investment in R&D and gradually transforms these countries into receiving countries of international students.

47.1.2 Technological Advances as Driving Force

Another prominent driving force is the advancement in computer and information technology that shapes almost all aspects of our everyday life. Today, people communicate with others across cultures and distances with the help of technology for personal, professional, or educational purposes. In the rapidly changing workplace,

many organizations use computer-mediated communication tools to telecommute and work from virtual offices without the nuisance of physical and time barriers. Collaborating centers or geographically dispersed teams in different time zones transfer work so that every center or team member is working during the daytime, which is known as the 24-h knowledge factory. Over the past decade, technological inventions have been introduced every week and this trend continues to grow. The Internet and telecommunication technologies strongly contribute to globalization in many areas. In education, the growing multicultural student population of universities and the introduction of virtual collaboration in education mirror the contemporary Internet-based and intercultural workplace of many professionals. In response to this situation, many universities are using new technologies as learning environments and implementing virtual campuses to better prepare students for the working world after graduation.

The vast and rapid expansion of technology worldwide is changing the traditional forms of student mobility. The most recent and biggest change in this regard is the introduction of Mass Open Online Course (MOOC) programs in September 2011 at Stanford University. MOOCs provide free or very inexpensive and certified programs that contain course materials such as videos, readings, exercises, as well as interactive forums that help build a community for learners and teachers. Several MOOC providers emerged, mostly associated with top universities, including Coursera and Udacity at Stanford and edX run by MIT and Harvard. Over the past 2 years, MOOC offerings and enrollments have grown rapidly; as of May 2014, more than 900 MOOCs are offered by only US institutions. The typical enrollment size of a MOOC course is about 20,000 students, but potentially can reach up to about 300,000 (e.g., Udacity's Computer Science 101, with an enrollment of over 300,000 students). MOOC is definitely a hallmark of contemporary education and a major change in accessibility to higher education worldwide in general and virtual mobility in particular. But, the effectiveness of MOOCs in comparison to traditional forms of education has still to be proven.

Another emerging form of virtual mobility is the Global Classroom. The Global Classroom implies creating a virtual environment of one joint classroom where students from two or more schools in different countries receive instructions from one teacher as if they are in the same classroom. Using collaborative technologies in the Global Classroom creates both potential benefits – by promoting cooperative learning and sharing culturally divergent knowledge – and challenges, in terms of equitably supporting learners, specifically with different cultural backgrounds. The Global Classroom programs engage educators and students via online learning and team projects with participants usually at the higher and secondary education levels. There are a few prominent programs in the field, such as SUNY Collaborative Online International Learning, Global STEM Education Center, East Carolina University offering "Global Understanding" course, Global Nomads Group, MOVINTER (enhancing virtual mobility to foster institutional cooperation and internationalization of curricula), REVE (Real Virtual Erasmus), VMCOLAB

(Virtual Mobility Collaboratory), iEARN, Soliya, and ePals. The virtual mobility programs expand cultural and technical competencies and give students a learning advantage in preparation for the global workforce.

47.1.3 Climate Instability as Driving Force

Examples of the most essential environmental concerns today include climate change, the greenhouse effect, sea-level rise, the increasing demand for food, global dimming, natural disasters and their consequences on the environment, nuclear meltdown, radioactive waste, ecosystem destruction, water pollution, soil contamination, air pollution and other pollution issues, and impact on human health. Since we all share one planet and live in an interconnected world, the responsibility of individuals in every country is to reduce the risks of these pressing environmental concerns. Globally competent students should prepare for the interconnected world by learning how to investigate, recognize, communicate, and take action regarding globally important environmental issues (Boix-Mansilla and Jackson 2011). Globally competent students should be able to connect the local to the global, for example, by explaining the use of renewable energy sources (solar, wind power), recycling, and sustainable living at a local level and how these can make a difference at a global level.

Several educational initiatives have been launched to respond to the most essential environmental concerns by preparing globally competent students. Students actively participate in person or online in the various interschool and/or university networks of environmental study/research groups. For example, the Global Connections and Exchange My Community, Our Earth Youth TechCamps offers high school students from the USA, Bolivia, Panama, and South Africa an opportunity to work together in cross-cultural teams on the use of Geotechnologies for Climate Change and Environment. Another example, the International Study Visits Environmental Sciences at Wageningen University, requires students from the Netherlands and Ukraine to collaborate on a 2-week project (first week online and second week on a face-to-face basis) to study two major environmental disasters, Chernobyl and Fukushima, in connection with the theme of "radioactivity and nuclear power" (Popov et al. 2014).

On the basis of the literature, we examined studies that specifically focus on the effects of student mobility on global competence development. The results of student mobility relating to the development of global competence played out differently in various studies depending on a number of factors that were either accounted for or not: form of mobility, pretest measure of intercultural competence, methods used in mobility research, study abroad intent, pedagogical interventions, institutional differences, and many others. These differences along with the study details are described below to summarize the students', teachers', and education institutes' experiences with developing global competence through student mobility.

47.2 What Are the Effects of International Student Mobility on Global Competence?

In the following sections, we summarize theory and research on global competence by paying particular attention to existing pedagogical and methodological approaches for its development through student mobility. Then, we synthesize pedagogical findings on the benefits of students traveling physically or virtually to another country in pursuit of their education in relation to global competence development.

47.2.1 At a Glance

The literature about international student mobility clearly shows that students generally highly appreciate their stay abroad. They are aware of the new skills learned, the extra knowledge gained, and sometimes a shift in attitudes, reflected in expressions as "I came back as a new human being" or "This was a life-changing experience" (Root and Ngampornchai 2013). A placement abroad is "an important activity for vocational students to learn about their profession abroad, but above all to learn about life, flexibility, adaptation, acceptance of different situations, etc." (Paulusse 2014, p. 14). The popular European exchange program ERASMUS is valued as a "largely enjoyable experience" in a research among 190 Italian ERASMUS students (Jacobone and Moro 2014, p. 14). The LEAFSE[1] experience is labeled as "a significant life experience" (Wals and Sriskandarajah 2010, p. 13). Positive effects are also mentioned by employers who report that internationally experienced young graduates have higher competences than those without international experience, referring to adaptability, initiative, the ability to plan, and assertiveness, in a big survey about the professional value of ERASMUS (Janson et al. 2009). The students in this survey report 5 years after their experience abroad a positive effect on getting their first job and obtaining a position and income that fits their level of education. The results, however, should be interpreted with care, because the researchers notice that the ERASMUS students participating in this survey are a selective group of students of whom more than half had prior international experience.

Nevertheless, there is ample evidence in the literature on student mobility that exposure to a different culture by a study or internship abroad in itself does not guarantee a growth in global competence (Vande Berg et al. 2012; Pedersen 2010). The learning outcomes of international study or internships are influenced by many factors such as motivation of the students, institutional support, prior intercultural and international experiences, the length of the stay abroad, whether mobility has

[1] LEAFSE: Learning through Exchange about Agriculture, Food Systems and Environment, a European Union-Australia student exchange program that took place in 2004 and 2005.

the form of an internship or a study exchange, the guidance of engaging skilled instructors, or an intercultural curriculum (Paige et al. 2012). The exposure to a foreign culture can lead to either greater flexibility or greater rigidity (Maddux et al. 2010). In addition, international students may differ with regard to their academic preparedness and financial resources, and according to Choudaha and his colleagues (2012), they thus can be classified in four groups: strivers (students pursuing their education while being employed part time, seeking for financial aid opportunities, and striving for getting education in prestigious universities), strugglers (students having limited financial recourses and lacking some academic preparedness), explorers (students pursuing not only their academic interests but also getting new personal experiences from living and studying abroad), and highfliers (students aiming at getting prestigious education abroad and being able to afford this without financial aid from the university). In this way, outcomes of global mobility programs in terms of a growth in global competence cannot be directly generalized to other fields of study without additional research due to the different types of international students and the varying level, depth, and length of their exposure to a different culture and institution.

47.2.2 Research Regarding Global Competence and Student Mobility: Scope, Assessment Methods, and Instruments

Most research has been done at the level of higher education. Noticeable is the relative underrepresentation of vocational and professional education institutes in the research literature. Tran (2012, p. 493) writes: "There has been a lack of theoretical and empirical research on the learning characteristics of international students in vocational education while extensive research has been devoted to these issues in higher education." Tran refers to the role and position of international students in vocational education, but also little has been published about the results of global mobility of national students in vocational education. Furthermore, there is an overrepresentation of research that focuses on American students studying abroad or international students in the USA.

What is measured in the body of research about global mobility is also different: enhancement of creativity, intercultural competence development, the position on the scale of Intercultural Development Inventory (IDI), efficacy of intercultural pedagogy, career development, the creation of a community of learners, practices and perceptions of teachers preparing students for study abroad, etc.

Traditionally, methods used in student mobility research are anecdotal research, retrospective survey, or quasi-experiment with the use of a pretest-posttest design with or without a control group to measure changes in students' knowledge, skills, and attitudes over time (van 't Klooster, E 2014). If a pretest-posttest design is applied, these instruments measure the perceived growth in global competence by the students themselves, but do not represent changes in actual behavior or attitude.

Sometimes additional instruments are used to complete the pretest-posttest information. Van den Hoven and Walenkamp (2013), for example, used additional interviews with the students and 360° feedback forms, completed by teachers, fellow students, parents, and friends of the students.

In most of the research, the time span between the stay abroad and the posttest is short. A few researchers report about the long-term effects of international mobility. For example, the US-based Institute for the International Education of Students did a survey among over 3000 participants of its programs from 1950 to 1999. The results show the impressive impact that study abroad had on the career development of the participants, as Norris and Gillespie formulate: "an impressive 84 % of the alumni who worked internationally attested that their study abroad experience enabled them to acquire a skill set that influenced their career path" (Norris and Gillespie 2009, p. 390). Wals and Sriskandarajah report about the long-term impact of an intensive European Union-Australia student exchange program for master's level students in the fields of agriculture, food systems, and environment. The program contributed to the development of global competence; many students expressed that they had "become more sensitive to people with a different background, consider themselves more open and tolerant, and have a strong interest in what goes on elsewhere in the world" (Wals and Sriskandarajah 2010, p. 18).

While language skills and other professional skills can be measured by clear-cut, objective language and professional skills tests, this is not the case for global competence or intercultural skills. The similarity between most of the instruments assessing global competence is that they are based on self-assessment using digital questionnaires. The instruments to measure the learning outcomes or benefits in terms of global competence vary from the widely used Intercultural Development Inventory (IDI, Hammer et al. 2003) and Multicultural Personality Questionnaire (MPQ, Van der Zee and Van Oudenhoven 2000) to the Strategies Inventory for Learning Culture (Paige et al. 2012) and the Intercultural Sensitivity Index (ISI, Clarke et al. 2007) or the Intercultural Adjustment Potential Scale (Matsumoto et al. 2001 in Behrnd and Porzelt 2012, p. 216), the Cross-Cultural Adaptability Inventory (CCAI), the Critical Incident Questionnaire (CIQ, Behrnd and Porzelt 2012), the Survey on Intercultural (Relocation) Adaptability (SIA, SIRA, created by Grovewell LLC and R.S. Mansfield Associates), the Intercultural Sensitivity Scale (ISS, Chen and Starosta 2000), the Employability Development Profile (EDP, Dacre Pool and Sewell 2007), the Miville-Guzman Universality-Diversity Scale (Miville et al. 1999), the Intercultural Competence Profiler (ICP, Trompenaars and Wooliams 2009), the Spony Profiling Model (SPM, Spony 2003), the Global Perspectives Inventory (GPI, Braskamp et al. 2010), the Intercultural Readiness Check (IRC, Intercultural Business Improvement 2012), the Global Knowledge Inventory (GKI, Lohmann et al. 2006), and the Beliefs, Events, Values Inventory (BEVI, Shealy 2006).

Sometimes research findings are based on reflective journals (Root and Ngampornchai 2012) or narratives of educators (Foster et al. 2013). Root and Ngampornchai (2012) analyzed reflective papers of students who had returned from several education abroad programs. Gill (2007) uses multiple qualitative methods;

she investigated Chinese students' postgraduate learning experience in the UK applying a "case study format," using ethnographic and narrative methods including participant observation, informal in-depth interviews, and continual reflection on the participants experience and her own corresponding experience as an overseas student (Gill 2007, p. 170).

A comprehensive review of currently available assessment tools for intercultural competence by Matveev and Merz (2014) showed that across all models and tools the integral intercultural competence dimensions are either cognitive, affective, or behavioral. Specifically, there are at least six cognitive dimensions (i.e., culture-specific knowledge, attitude, open-mindedness/flexibility, critical thinking, and motivation), two affective dimensions (i.e., cultural empathy and emotional stability/control), and three behavioral dimensions (i.e., experience, social initiative, and leadership).

We will now present an overview of studies covering the effects of physical international mobility and subsequently the effects of virtual international mobility.

47.2.3 Studies on the Effects of Physical International Mobility on Global Competence

There is a large volume of published studies describing the role of global competence with varying degrees of operationalization, which resulted in multiple conceptual models of global competence and its terminologies (e.g., global citizenship, intercultural sensitivity, global mindset, intercultural competence, etc.). This ambiguity is also reflected in the number and variation of variables measured in the reviewed studies. Drawing on the definition of global competence, i.e., dynamic pursuit of *knowledge*, *attitudes*, and *skills* that together enable individuals to communicate and work effectively in national and international contexts, below the reviewed studies are grouped and described based on the main variables that have been studied by various authors.

47.2.3.1 Studies Focusing on Students' Attitudes and Knowledge in the Domain of Global Competence

Cultural empathy, open-mindedness, social initiative, emotional stability, and flexibility were the elements of global competence studied by Stronkhorst (2005). He investigated the learning outcomes of international mobility at two Dutch institutions of higher education and compared students who did an international internship of 3–4 months as part of their bachelor program with students who studied for 3–4 months at a foreign partner institute. A clearly positive effect on the beforementioned elements could be established for only 35–45 % of the students of both institutions. Cultural empathy and open-mindedness were higher for the internship

group and flexibility was higher for the exchange group. Stronkhorst reveals: "Yet, it should be stressed that a considerable number of students at both institutions hardly made any progress at all and, even worse, the period abroad had a negative impact on the multicultural competences of quite a few students" (Stronkhorst 2005, p. 302).

A more open attitude toward intercultural communication and a greater flexibility to adjust to new people and places were reported by the undergraduate students of a US business school in the research of Clarke et al. (2007) as the outcome of their stay abroad. One group of students completed a semester of junior-level courses on campus. Another group completed the same coursework within a university in Belgium. The researchers conclude that "a study abroad semester helped shape students into more globally minded individuals" (Clarke et al. 2007, p. 176).

Hendershot and Sperandio (2009) focused in their study on identifying students' perceptions of the development of their global citizen identity (i.e., "one who is open- minded and accepting of other cultures in a respectful, tolerant and non-judgmental fashion…." p. 46) within the context of an undergraduate global citizenship program at Lehigh University in the USA and which program aspects, such as academic coursework, study abroad, and experiential/cocurricular learning, the students believed contributed to this growth. Abroad experiences were perceived by the participants as being the most important aspects in forming students' global citizen identities.

The following question was examined by Braskamp et al. (2009): "Do students change their self-evaluations on cognitive, intrapersonal, and interpersonal domains of global learning and development from the beginning to the end of their semester-long education abroad?" To answer this question, a pretest-posttest design without a control group was utilized to measure changes in students' global perspective, global awareness, and global engagement over the period of one semester. About 250 students, participating in this study enrolled in ten different education abroad programs from five different institutions, completed the GPI (Braskamp et al. 2010) both on the pretest and the posttest measures. Findings of this study showed progress in students' global awareness, global perspective, and global engagement over the education abroad experience. Students reported that they were learning how to analyze and understand cultural differences, but they did not gain or gained very little knowledge on "how to take these cultural differences into account in their thinking about truth and knowledge" (Braskamp et al. 2009, p. 107).

Intercultural awareness, personal growth and development, awareness of global interdependence, and functional knowledge of world geography and language were the elements of global competence that Chieffo and Griffiths (2004) researched. They compared two groups of students attending the University of Delaware in the USA. One group of students ($N=1509$) enrolled in short courses taking place abroad, and another group ($N=827$) completed similar short courses on campus. The students who enrolled in short courses abroad perceived themselves more confident in their levels of intercultural awareness and functional knowledge and engaged in more international activities than their counterparts who followed similar courses on campus.

A number of studies reported positive effects of study abroad participation on students' worldview and global perspective development (Carlson and Widaman 1988; McCabe 1994). For instance, Carlson and Widaman (1988) measured the perspective of 450 students on global issues and cross-cultural understanding before and after their study abroad. The study abroad experiences led to the formation of new and different worldview perspectives, higher levels of international political concern, cross-cultural interest, and openness to divergent cultural experiences compared to the students of control groups who did not participate in a study abroad program.

47.2.3.2 Studies Focusing on Students' Attitudes and Skills in the Domain of Global Competence

What we know about the effects of study abroad participation on students' global competence development is largely based upon studies using self-reported data on students' knowledge and attitudes. However, far too little attention has been paid to the assessment of the actual skills that create global competence. Below we review several studies that focus on not only cognitive and affective aspects but also on skills and behavioral dimension of global competence.

Jacobone and Moro (2014), in their research among ERASMUS program[2] students, evaluated three different levels of the ERASMUS program: output (self-experience), outcomes (acquisition of language, self-efficacy, intercultural and employability skills), and impacts (European and national identity) (Jacobone and Moro 2014, p. 2). The research method consisted of a two-wave longitudinal survey of two-student samples, Erasmus and non-Erasmus, resulting in a total of 352 students from the University of Bari who completed both pretest and posttest questionnaires. The researchers conclude that "the students participating in the best known and most popular student mobility programme in Europe perceive, upon their return from abroad, an increase in *linguistic and intercultural skills*, as well as more positive perceptions of self-efficacy" (Jacobone and Moro 2014, p. 14). Also each *employability skill* is perceived as higher among Erasmus students compared to nonmobile students.

Georgia Tech in 2005 introduced the International Plan, a comprehensive program that focuses specifically on global competence development including training in second-language proficiency, coursework in international subjects, and significant international experiences (a minimum of 26 weeks) (Lohmann et al. 2006). A 5-year quasi-experimental research was conducted to assess the validity of the conceptual model and to compare the learning outcomes in terms of global competence of the International Plan students against students who engaged in less-intensive international experiences and students who did not engage in any international activities. Pre-/post-surveys of students who either studied or worked

[2] ERASMUS program is the European exchange program, named after the well-known traveling scholar Erasmus of Rotterdam (1465–1536) (Knight and de Wit 1999).

abroad found significant gains on the general self-efficacy scale (an individual's *ability to cope with stressful life events*), as well as gains in self-reported competence to *practice their discipline in different social or cultural settings*, and an increased understanding of the host culture's beliefs and values. The results showed that students participating in full semester abroad programs (16 weeks) have higher gains in intercultural sensitivity than students participating in summer (8–10-week) programs. However, the results on the Global Knowledge Inventory (a set of questions on international systems, international political economy, and comparative politics/culture) showed that International Plan students did not score significantly higher than groups with lower levels of foreign exposure.

Global engagement (e.g., working for the common good, enhancing social justice, and environmental preservation) was studied by Fry et al. (2009) who examined the long-term impact of study abroad among 6391 former study abroad participants (from 1960 to 2007) from 22 US colleges and universities. Students who studied abroad have globally engaged in different ways in subsequent years and were more likely to *demonstrate global values*.

An *increase of a student's diversity of contact*, expressed by, e.g., "I am interested in learning about the many cultures that have existed in this world" and "I often listen to music of other cultures," was found by Salisbury et al. (2013). They used longitudinal data from the 17 participating institutions of liberal arts education to test the impact of study abroad on intercultural competence. The analytic sample included 1647 students and pre- and posttest measures including a control group were applied. However, it seems that study abroad participation has little impact on a student's appreciation of cultural differences (e.g., "Knowing about the different experiences of other people helps me understand my own problems better").

AFS Intercultural Programs, one of the largest high school exchange organizations operating worldwide, conducted a long-term impact study, which showed that 89 % of AFS participants who subsequently study abroad in conjunction with their university studies *speak at least one foreign language*; 45 % of AFS participants who also study abroad in conjunction with university studies report *having professional networks outside their own culture*. AFS participants who also study abroad in conjunction with university studies have *lower intercultural anxiety levels*, and they have higher IDI scores (Hansel 2008).

Surveys conducted by van 't Klooster (2014) among over 1000 students have shown that study abroad participation was not universally beneficial. His study shows that students who did their studies, internships, or short-term programs in low-income or socialist countries benefit much less from their international experiences in terms of technical, intra-, and interpersonal management skills as well as cross-cultural competencies. Van 't Klooster (2014) also suggests that the following factors may determine the learning outcomes from international experiences: very short period of time abroad, staying in an expat bubble, poor quality of employment, and lack of reflection activities after study abroad.

This review reveals that in many studies positive effects of physical mobility on global competence development were found, such as more linguistic and intercultural skills and higher perception of self-efficacy and employability, greater

flexibility, an increase in the diversity of contacts, and international engagement and more professional networks outside their own culture. These effects, however, are not a linear result of the mobility programs. Length of stay, monitoring of the students before, during, and after their stay in a foreign country by offering intercultural input and reflection activities, and motives of students are among the factors that influence these positive effects. Some studies even found no negative effects, implying that mere participation in a mobility program does not automatically lead to a growth in global competence.

47.2.4 The Effects of Virtual Mobility on Global Competence

According to UNESCO there are about 3.4 million students who study abroad each academic year. It means that only 2 % of all student population is "physically" participating in international academic mobility. However, one of the ways in which educators can provide more opportunities for students to have international experience is through virtual mobility. Several projects and programs on virtual mobility, mostly initiated in various institutions in Europe and the USA, have shown its benefits. However, there are relatively few empirical studies addressing evaluations of virtual mobility programs that are specifically designed to explore the impact of the use of educational technologies on the development of students' global competence. And among the few studies actually carried out, the main focus was on student cultural competencies, the use of educational technology to interact and collaborate with unknown colleagues, students' global competence level both before and after the study, students' interest in and knowledge of global issues, as well as the skills needed for competence as a citizen in a globalizing world. Below we review some of these studies.

In a study by Li (2013), 68 students from China and the USA worked in culturally heterogeneous pairs on a semester-long project related to international business using virtual communication technology (namely, the Microsoft Windows Live Messenger). The pedagogical intervention that was proposed in this study was a research paper assignment that required students to collaborate virtually with international partners. More specifically, the students were encouraged to integrate knowledge they acquired from multiple disciplines into meaningful business solutions working on various research topics (e.g., finance, human resource management, marketing, etc.). Participants' global competence level both before and after the study was measured. Global competence in Li's study was operationalized as "one's ability to transcend domain or discipline and properly comprehend cultural norms and global events so that one can interact, communicate, and work effectively outside one's environment" (Li 2013, p. 127), and it was measured on the basis of a three-dimensional taxonomy targeting global attitudes, knowledge, and skills. The results showed that the American and Chinese students had similar levels in knowledge and skills dimensions; however, the American students had gained significantly more in attitudes.

Significant gains in knowledge in global issues and skills needed for global competence were the result of an educational program, developed by Johnson (2011) and her colleagues. The GlobalEd project is a problem-based learning simulation, which was integrated within the middle school and high school social studies classroom, utilizing email and online discussion formats to facilitate communication between groups of students ($N=260$) at geographically dispersed school locations. The GlobalEd project assigns school students to a specific country to work for 5 weeks in virtual groups on five topical areas and behave as diplomats consistent with their assigned country's foreign policy.

The impact of a wiki-based international collaboration project on participants' cultural competencies and comfort, using technology to collaborate with unknown colleagues, was evaluated by Ertmer and colleagues (2011), in their research among preservice teachers ($N=202$). Each team was composed of seven or eight members from the USA and was paired with two to four international students from England, Russia, South Korea, or Sweden. Every team was asked to create collaboratively a wiki chapter about a specific social media tool (Facebook, Twitter, Mindomo, etc.). Results from this study indicated that engaging in a 5-week cross-cultural wiki development project had a significant impact on the development of students' cultural competencies (e.g., cross-cultural awareness and acceptance of differences among others), measured by a pre- and post-survey Miville-Guzman Universality-Diversity Scale (Miville et al. 1999). Furthermore, the research findings demonstrated that participation in a cross-cultural technology-enabled collaboration had a significant positive impact on students' perceived comfort for using computer-mediated technologies to collaborate with culturally diverse colleagues.

A number of ongoing research projects aim to examine the impact of virtual mobility programs, which use educational technology and cross-cultural collaboration to foster greater global competence development (e.g., GlobalEd 2, Soliya, Global STEM Education Center). The results of the studies so far look promising. It is important to find out exactly what that impact looks like and how comparable the impact of virtual mobility is in relation to physical student mobility. Furthermore, little is known about blended or hybrid forms when virtual mobility serves as a complement to the existing physical mobility. Future research needs to target the blended form of mobility since graduates need skills to function effectively in both worlds: physical and virtual.

47.3 Implications for Educators

Research findings implicate that if global competence is a goal of international mobility programs, "we need to do much more than send students abroad to study" (Pedersen 2010, p. 77). Based on the literature, the effect of mobility programs is mainly influenced by the curriculum and/or content of the program and by the quality and activities of teachers, and these factors are interconnected.

47.3.1 The Curriculum and Content of the Program

The formulation by education institutes of clear goals and objectives for the study or internship abroad, and which specific global competencies are addressed, is considered to be of high importance by Trede et al. (2013). The researchers interviewed academic staff of Australian universities, who were responsible for international activities, about their practices and perceptions of preparing students for these experiences. They found that although all the international programs in which the staff members were involved were well planned with regard to procedures, a clear intercultural learning purpose with regard to developing intercultural or global competence in their students was lacking. Related to this is the importance of assessing the students' performance. One of the world's leading organizations in the field of education abroad is "the Forum on Education Abroad," which developed a "Guide to Outcomes Assessment in Education Abroad" (Bolen 2007). This guide provides a number of tools for researchers and practitioners interested in designing and assessing education abroad outcomes as a part of education abroad programming. In an investigation into assessing intercultural competence, Deardorff's (2006) Delphi study revealed that 23 intercultural scholars who participated in her research chose case studies and interviews as the best to assess intercultural competence. They also mentioned narrative diaries, observations, and judgment by self and others as being important assessment methods. Boix-Mansilla and Jackson (2011) advocate ongoing global competence-centered assessment that should make use of a variety of methods, such as students' presentations, video productions, and graduation portfolios.

Another aspect related to curriculum design is the implementation of an international pedagogy, described by Tran (2013) as: "an approach to teaching and learning, which adds value to student learning and incorporates international examples, case studies, and broader dimensions of knowledge and skills. It reaches out beyond competency-based training to include the wider cross-border contexts" (Tran 2013, p. 503). This international pedagogy also includes guided facilitation and reflection and a balance of challenge and support, for example, by taking students out of their comfort zone, providing assignments to increase contact with the host culture and class discussions for increased meaning making (Pedersen 2010; Brewer and Cunningham 2009; Root and Ngampornchai 2012; Berardo and Deardorff 2012). The comprehensive literature review of Vande Berg et al. (2012) reveals that interventions before, during, and after the study abroad learning process are essential to increase the global competence of students. Interventions include instruction on both verbal and nonverbal communication and how language reflects culture, cultural mentoring, the provision of cultural content and of the opportunity for students to reflect on their experiences, and providing opportunities for active engagement with the host culture. Dutch students who were interviewed after their study or internship abroad emphasized the importance of being forced to reflect on their experiences during and after their stay abroad, in order to recognize and acknowledge the impact of these experiences on their professional development and competence (Van den Hoven and Walenkamp 2013, p. 107).

Pedersen (2010) compared students who participated in a year-long study abroad program with and without intercultural pedagogy including cultural immersion, guided reflection, and intercultural coaching. Scores on the IDI of both groups were compared with scores of a control group of students who stayed at home (Pedersen 2010). Previous travel experience and the presence of intercultural pedagogy appeared to have most influence on their intercultural competence. Interestingly the group that traveled abroad, but did not participate in the extra intercultural pedagogy activities, did not have a significant change in their IDI scores.

A third important factor that contributes to a more effective international mobility program is the formulation of specific learning goals by students. Students should be assisted in formulating these goals, for instance, by offering predeparture workshops that "1. assist study abroad students establish goals for their international experience, which primarily include aspiration to learn more about the culture and people in the country in which they will study, 2. reinforce students' goals to become more cross-culturally sensitive and knowledgeable, and 3. change students' social goals into goals which focus on gaining cross-cultural sensitivity and understanding" (Kitsantas 2004, p. 449). Facilitation of student awareness of these learning goals before, during, and after the study abroad program is stressed by Williams (2009). The importance of establishing goals is supported by the findings of van 't Klooster (2014) who suggested that students should think carefully about what competencies they want to achieve and choose the type of their international studies accordingly. For instance, participating in international research projects will improve management competencies and not so much cross-cultural competencies, as compared to becoming a student or an intern abroad.

A last factor mentioned in literature is the length of the stay abroad. The longer duration of a program abroad significantly impacts the development of students' intercultural sensitivity (Medina-Lopez-Portillo 2004). Behrnd and Porzelt (2012) accomplished two separate studies in which they compare the intercultural competence of German students with and without experiences abroad. The length of stay abroad appeared to be of importance in obtaining a higher score in strategic intercultural competence. The authors conclude that students should have time to build rewarding relationships with members of the host culture and to reflect on their experiences (Behrnd and Porzelt 2012).

47.3.2 Quality and Activities of Teachers and Trainers

Cultural mentoring and the value of having a cultural mentor appear to be one of the major factors enhancing the intercultural sensitivity of students as a result of their stay abroad. These cultural mentors should be well trained and prepared, whether they are faculty, in-country professional staff, or others (Vande Berg et al. 2012; Trede et al. 2013). The research of Tran (2013) showed that there is a lack of adequate and coherent professional development for VET teachers in Australia in relation to how to adapt pedagogy and work effectively with international learners.

Recent research by Gaalen et al. (2014), providing an inventory of Dutch higher education institutions' policies in the area of internationalization at home, underscores the importance of active supervision by teachers and trainers and the role of reflection, stating: "the yields of improved mobility can be further increased when institutions actively supervise students during their stay abroad and help consolidate their learning experiences after the end of the stay by means of self-reflection assignments and testing" (Gaalen et al. 2014, p. 3). The commitment of staff involved in the mobility program played an important role in the positive personal and professional development of the students who participated in the research of Wals and Sriskandarajah (2010).

47.4 Conclusions

Global competence is among the new abilities needed for graduates to operate successfully in a world of growing diversity and complexity. Knowledge of what international experiences best instill global competence and what means should be used to assess the level of its development is still in the process of scholarly inquiry. Not only educational policy demands but also empirical evidence calls for a more solid grounding of global competence attained through international mobility programs.

There are several approaches to increase global competence among students. These may include internationalization of university curriculum by incorporating additional international courses, creating a special degree program and/or fostering foreign language proficiency, but promoting international experiences and knowledge attained through global student mobility is still the most popular pedagogical approach among educators. However, sending students to another country is in itself not sufficient to reap the benefits of this international learning experience. Our literature review showed that there are a number of determining factors that can affect, foster, or impede the development of global competence. First, students traveling abroad cannot be generalized and put in one category as "international students." There may be distinguished at least four types of students, depending on their motives and financial resources (Choudaha et al. 2012). Therefore, the growth in global competence of different types of mobile students can vary due to initial variations in their personal incentives and levels, depth, and length of the exposure to a different cultural context.

Second, only in recent years, there has been an increasing interest among educators to unify their efforts in terms of internationalization initiatives which focus on conceptual models of global competence, curriculum modalities to instill it, and measurement standards to guarantee that graduates can operate successfully in a global environment (for an overview, see "The Forum on Education Abroad"; Boix-Mansilla and Jackson 2011). The emphasis is put on the assessment of the actual skills that create global competence and that would enable students not only to recognise, understand, and appreciate certain intercultural differences but also to

reconcile these differences by realizing the necessary actions (Trompenaars and Wooliams 2009).

Third, research by Daloz (2000) has indicated that acquiring global competence through student mobility is a type of transformative learning which requires at least five essential prerequisites: (1) exposure to a different (cultural) context and contact with the host culture; (2) a long period of time; (3) reflection activities through discussions for increased meaning making; (4) guided facilitation or teachers' active leadership role in cultivating students' global attitudes, knowledge, and skills throughout the whole educational program; and (5) commitment to the goal of learning which is to construct knowledge about themselves, others, and social norms. In the process of transformative learning, students experience shifts in their mental models, which lead to the formation of new perspectives and behavioral practices. If at least one of these prerequisites/conditions is not successfully fulfilled, the international program objectives may not be achieved (see Stronkhorst 2005; Gullekson et al. 2011; Salisbury et al. 2013). For instance, student's knowledge and experiences acquired while studying abroad that are disconnected from routing learning activities throughout the whole educational program are likely to be ineffective and temporal. Furthermore, it has been suggested by many authors that education institutes need a clear vision and correlating strategy on the "what, why and how of various international orientation activities" (Stronkhorst 2005); a coherent trajectory of predeparture courses or seminars, cultural guidance when abroad, and reflection activities when the students return can best instill global attitudes, knowledge, and skills (Van den Hoven and Walenkamp 2013; Vande Berg et al. 2012).

The goal of this literature review is to help researchers and educators as they seek to understand and improve the global competence of their students by immersing them in other cultures either physically or virtually. Studies that are mainly based on self-report data suggest that study abroad participation appears to increase students' worldview and global perspective development. However, according to studies that used control group designs and behavioral and implicit attitude tasks to measure global competence, it seems to have little impact on a student's appreciation of cultural differences and its integration in students' thinking about truth and knowledge. Notwithstanding this, research also suggests that student mobility can be a powerful educational instrument to instill global competence, provided the availability of a high-quality curriculum maximizing the potential of study abroad programs and high-quality cultural mentoring offered by teachers and/or trainers.

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